Implementation Science Annotated Bibliography

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Overviews of the development of implementation science and training efforts to develop knowledge in the field

Glasgow, Russell E., Cynthia Vinson, David Chambers, Muin J. Khoury, Robert M. Kaplan, & Christine Hunter. 2012. National Institutes of Health Approaches to Dissemination and Implementation Science: Current and Future Directions. *American Journal of Public Health* 102(7) 1274-81.

This article summarizes NIH's preliminary efforts to address the gap between research and practice. The authors give basic definitions to distinguish, for instance, between implementation science and effectiveness research. They emphasize the multi-faceted nature of the endeavor, and propose 5 key phases (note: these key phases include the basic research phase of discovery). NIH spends a relatively small amount on dissemination and implementation initiatives, but that amount has grown since 2000. The NIH Center for Scientific Review now has a standing review committee (Dissemination and Implementation Research in Health). They note the need to address scaling up and sustainability of innovations. For future research, they recommend consideration of relevance (external validity), efficiency and speed (which suggests methods other than large-scale RCTs), research—practice collaboration, improved capacity (by training researchers in appropriate methodologies to analyze extant data), and cumulative knowledge.

Irwin, Molly & Lauren H. Supplee. 2012. Directions in Implementation Research Methods for Behavioral and Social Science. *Journal of Behavioral Health Services & Research* 39 (4): 339-42.

This article introduces a set of articles developed for a Roundtable supported by the Administration for Children and Families and other federal partners. The meeting identified a number of relevant issues in implementation science: its complexity, the need for better measures and measurement tools, the need for clarity and consistency of terms, and the recognition of the diverse efforts that take place under the umbrella term "implementation science" (to build theory, to interpret impact, to establish causal relationships between implementation factors and outcomes, as well as between organizational and other factors and implementation success).

Meissner, Helen I., Russell E. Glasgow, Cynthia A. Vinson, David Chambers, Ross C. Brownson, Lawrence W. Green, Alice S. Ammerman, Bryan J. Weiner, and Brian Mittman. 2013. The U.S. Training Institute for Dissemination and Implementation Research in Health. *Implementation Science* 8: 12.

This article describes a 5-day training in Dissemination and Implementation Research in Health supported by the NIH and the Veterans Health Administration. The paper describes the relative dearth of graduate programs and training opportunities in dissemination and implementation research. This lack in part stems from the

interdisciplinary nature of the effort, which means there is no "obvious departmental home." The authors list the programs of which they are aware. The goal of the TIDIRH is to train investigators in appropriate research methods and to "cultivate interest for D&I research at institutions around the country."

Nils, Per, Christian Ståhl, Kerstin Roback & Paul Cairney. 2013. Never the Twain Shall Meet? A Comparison of Implementation Science and Policy Implementation Research. *Implementation Science* 8: 63.

This study compares the two fields of implementation science and policy implementation research. The authors suggest that the latter can inform IS through its more nuanced understanding of context as a mediator of change and the influence of the values and norms of the implementers.

Procter, Enola K., John Landsverk, Ana A. Abumann, Brian S. Mittman, Gregory A. Aarons, Ross C. Brownson, Charles Glisson, & David Chambers. 2013. The implementation research institute: Training mental health implementation researchers in the United States. *Implementation Science* 8: 105.

This article describes the components and participant experiences of those attending the Implementation Research Institute, which provides training to fellows and is supported by the National Institute of Mental Health.

Rabin, Borsika A., Peyton Purcell, Sana Naveed, Richard P. Moser, Michelle D. Henton, Enola K. Proctor, Ross C. Brownson, & Russell E. Glasgow. 2012. Advancing the application, quality and harmonization of implementation science measures. *Implementation Science* 7: 119.

This article describes an initiative to use the National Cancer Institute's (NCI) Grid-Enabled Measures (GEM) portal to address the lack of viable measures for implementation science and to encourage the development of common measures in the field. A small group of experts pre-populated the site with a number of constructs and associated measures, then advertised the initiative to other interested stakeholders who were invited to upload constructs and measures. The launch of the site was timed to coincide with the 5th Annual National Institutes of Health Conference on Science of Dissemination and Implementation. Users are allowed to rate and comment on measures. The authors note the value of measures rated highly on the "gold standard" and "practical" criteria. Note: the constructs and measures reflect the medical context of the initiative but also include more general ones.

Current collaborations of researchers/practitioners to promote and understand implementation

EPISCenter. http://www.episcenter.psu.edu/

The center supports the dissemination, quality implementation, sustainability, and impact assessment of a menu of proven-effective prevention and intervention programs, and conducts original translational research to advance the science and practice of evidence-

based prevention. Eleven evidence-based programs have been identified for support (e.g., LifeSkills Training Program, Multisystemic Therapy). The Center provides training and technical assistance to communities and practitioners to improve the quality of implementation, collect data, and plan for sustainability.

Lehman, Wayne E. K., D. Dwayne Simpson, Danica K. Knight, & Patrick M. Flynn. 2011. Integration of Treatment Innovation Planning and Implementation: Strategic Process Models and Organizational Challenges. *Psychology of Addictive Behaviors* 25 (2): 252–61.

The paper outlines some current frameworks and efforts to support "technology transfer" (i.e., the implementation of new research-based programs and practices) in substance use disorder (SUD) treatment settings. The Addiction Technology Transfer Centers (ATTCs) are supported by SAMHSA and assist programs by providing procedural guidance following a 10-step process (http://www.atcnetwork.org). The NIATx (Network for the Improvement of Addiction Treatment) model incorporates business improvement models to support treatment providers; the network provides educational materials, conferences, and coaching. The authors describe the TCU Treatment Process Model and Program Change Model which offer practical building blocks and tools to implement and evaluate programs and practices. The paper describes assessment tools available to assess aspects of organizations that are critical for promoting change and to utilize the results of those assessments to create change.

National Implementation Research Network (NIRN). http://nirn.fpg.unc.edu/

"The mission of NIRN is to contribute to the best practices and science of implementation, organization change, and system reinvention to improve outcomes across the spectrum of human services." The site offers a broad array of information about implementation science, including definitions, a review of current literature, and descriptions of the key components involved in successfully implementing a new innovation. The group is interested in helping develop a more extensive evidence base about what works in implementation science, and the site describes some of the projects currently underway around the nation.

Quality Enhancement Research Initiative (QUERI). http://www.queri.research.va.gov/default.cfm

QUERI was launched in 1998 as part of a system-wide transformation aimed at improving the quality of healthcare for veterans. Their mission is to improve care using research evidence to improve clinical practice. QUERI supports ten centers' focused on diseases or conditions that are highly prevalent among veterans. It also supports a Center for Implementation Practice and Research Support (CIPRS) that aims to facilitate accelerated improvement in the quality and performance of the VA healthcare delivery system through enhanced VA implementation practice and research. CIPRS programs include education and technical assistance to VA implementation researchers; technical assistance and support for VA implementation practice; and development of implementation science, theory and methods. The Center also supports collaborations between researchers and practitioners. The site offers a guide on how to conduct

implementation research (http://www.queri.research.va.gov/implementation/), which includes toolkits.

PROSPER Partnerships

http://www.prosper.ppsi.iastate.edu/default.asp?home

PROSPER stands for <u>PRO</u>moting <u>S</u>chool-community-university <u>P</u>artnerships to <u>E</u>nhance <u>Resilience</u>. PROSPER isn't a program, rather it is a scientifically-proven delivery system that facilitates sustained, quality delivery of evidence-based programs that reduce risky youth behaviors, enhance positive youth development and strengthen families.

The PROSPER Partnership model is an evidence-based delivery system that features a menu of tested and proven programs for sixth and seventh graders. Programs on the menu have a successful track record for preventing risky behaviors in youth, promoting positive youth development, and strengthening families.

The Partnership model goes a step beyond just implementing evidence-based programs. It includes ongoing evaluation and technical assistance to ensure that programs are implemented as intended, teams continue to perform effectively, and partnership goals are being met.

The Center for Implementation-Dissemination of Evidence-Based Practices among States (IDEAS)

http://www.ideas4kidsmentalhealth.org/

This center focuses on the use of implementation science in health and mental health systems. They support the implementation of evidence-based practices (EBPs) and quality improvement initiatives (QI) in the states. Funded by NIMH, the site offers information on studies related to implementation science, conducts evaluation studies of implementation, publishes newsletters, and offers seminars.

Syntheses of the literature and/or a consolidating framework

Century, Jeanee, Amy Cassata, Mollie Rudnick, & Cassie Freeman. 2012. Measuring Enactment of Innovations and the Factors that Affect Implementation and Sustainability: Moving Toward Common Language and Shared Conceptual Understanding. *Journal of Behavioral Health Services & Research* 39 (4): 343-361.

The authors emphasize the need to develop a common language and shared understanding of concepts to encourage a more effective approach to implementation science. The benefits of doing so would be a growth in the accumulation of knowledge about what works in implementation, since findings and data across studies could be aggregated. The article presents two conceptual frameworks developed by the Center for Elementary Mathematics and Science Education: one that supports defining and organizing the components of innovations, and one that examines contextual factors affecting implementation. They argue that the use of such frameworks will enhance the

capacity of the field to understand what components of innovations and what factors impact implementation success.

Damschroder, Laura J., David C. Aron, Rosalind E. Keith, Susan R. Kirsh, Jeffery A. Alexander, and Julie C. Lowery. 2009. Fostering Implementation of Health Services Research Findings into Practice: A Consolidated Framework for Advancing Implementation Science. *Implementation Science* 4: 50.

This article describes the Consolidated Framework for Implementation Research (CFIR), an "overarching typology to promote implementation theory development and verification about what works where and why across multiple contexts." The authors define five major domains, based on their review of the literature (intervention characteristics, outer setting, inner setting, characteristics of the individuals involved, and the process of implementation). Each domain comprises a number of constructs that are briefly described. The authors suggest using the CFIR in conjunction with process theories to help flesh out unarticulated concepts/constructs in these theories. They warn against using all constructs CFIR to address every problem because that would "quickly mire evaluations." Many of the frameworks they assessed to develop the CFIR were also used by Meyers, Durlak, and Wandersman (2012) to develop their framework.

Damschroder, Laura J., & Hildi J. Hagedorn. 2011. A Guiding Framework and Approach for Implementation Research in Substance Use Disorder Treatment. *Psychology of Addictive Behaviors* 25(2): 194–205.

This paper shows how the Consolidated Framework for Implementation Research (CFIR) synthesizes the three frameworks that have been used in substance use disorder (SUD) intervention research. The authors present the rationale for implementation-focused evaluations in SUD research. They argue that research should differentiate core versus adaptable components, incorporate formative evaluation, and develop and test predictive models of effective implementation. Using the CFIR will promote synthesis across studies.

Fixsen, Dean L., Sandra F. Naoom, Karen A. Blasé, Robert M. Friedman, & Frances Wallace. 2005. Implementation Research: A Synthesis of the Literature.

This monograph is based on a review of 743 articles that were (1) well-designed experimental evaluations of experimental factors; (2) careful reviews of the implementation literature, or (3) theoretical discussion of implementation factors. The definition of implementation that guided this work is as follows: "a specified set of activities designed to put into practice an activity of program of known dimensions" (5).

Fixsen et al. begin the monograph by discussing how implementation happens in a community context, which influences how the process proceeds. This early section leads to a conclusion that is frequently reiterated throughout the monograph—that is, that data are lacking on important factors, measures, or interactions (e.g., in this chapter on community, the literature recognizes the importance of community, but researchers are only beginning to develop measures related to planning and implementation programs and practices).

Based on the findings from the review, they offer a five component conceptual framework for implementation: source (e.g., the evidence-based program); the destination (the organization that delivers the innovation); a communication link (the group working to ensure implementation with fidelity); a feedback mechanism (flow of information bidirectionally); and sphere of influence (the community contexts that impinge on the processes). They discuss the types of teams/team members needed, the stages of implementation, and a group of identified core components of implementation. These core components—also called implementation drivers—include staff selection, training, consultation/coaching, staff evaluation, program evaluation, and facilitative (administrative supports). One of the many strengths of the review is the inclusion of specific examples from the literature.

Greenhalgh, Trisha, Glenn Robert, Fraser MacFarlane, Paul Bate, & Olivia Kyriakidou. 2004. Diffusion of Innovations in Service Organizations: Systematic Review and Recommendations. *The Milbank Quarterly* 82(4): 581–629.

This paper presents the results of a systematic review of literature addressing the spread and sustaining of innovations in health service delivery and organizations. The search yielded 213 empirical studies and 282 non-empirical studies from 13 fields of research. Based on these studies, the authors developed and present a conceptual model for understanding the determinants of the diffusion, dissemination and implementation of health care innovations. The model considers determinants such as traits of the innovation itself (e.g., how complex or risky it may be), the role of communication channels, the outer context (e.g., the sociopolitical climate), and system readiness for innovation (see p. 595 for full model).

Based on their survey of the literature, the authors make recommendations for further research (and where research seems to be sufficient). They make particular note of the tiny number of studies that look at discontinuance (i.e., the decision to discontinue implementing an innovation) and sustainability. Overall, the literature lacks rich descriptions of process.

Meyers, Duncan D., Joseph A. Durlak, & Abraham Wandersman. 2012. The Quality Implementation Framework: A Synthesis of Critical Steps in the Implementation Process. *American Journal of Community Psychology* 50:462-480.

The authors conducted a systematic review to identify articles that presented implementation frameworks focused on the "how to" of implementation. They assessed the 25 frameworks identified through the review and synthesized the phases and steps to develop the Quality Implementation Framework (QIF). The QIF consists of 14 concrete steps taken over the course of four temporal phases. The authors also assessed the level of empirical evidence for each of the 14 steps and the amount of overlap between the frameworks, some steps being included in up to 96 percent of the frameworks and some in as few as 28 percent.

Meyers et al. also explain how the QIF intersects with the Interactive Systems Framework for Dissemination and Implementation, a framework that describes the processes and systems involved in moving an innovation from development into practice.

The paper includes a definition of "quality implementation": "putting an innovation into practice in such a way that it meets the necessary standards to achieve the innovation's desired outcomes" (p. 465).

The Public Health Approach to Violence Prevention. Retrieved from http://www.cdc.gov/violenceprevention/overview/publichealthapproach.html http://www.cdc.gov/violenceprevention/pdf/ph_app_violence-a.pdf

The web page (and publication) details a four-step public health approach rooted in the scientific method. It can be applied to violence and other health problems that affect populations.

- Step 1: Define and Monitor the Problem
- Step 2: Identify Risk and Protective Factors
- Step 3: Develop and Test Prevention Strategies
- Step 4: Assure Widespread Adoption

The guide offers a very brief overview paragraph on each step in the process, but offers little in the way of specific guidance on how to accomplish each of the steps, though additional links and resources are listed for each step (e.g., potential data sources for step one; registries of evidence-based practices for step 3).

Tools for use in implementation

A Road Map to Implementing Evidence-Based Programs. 2012. SAMHSA's National Registry of Evidence-Based Programs and Practices.

http://www.nrepp.samhsa.gov/Courses/Implementations/NREPP_0101_0010.html

This guide targets members of organizations (such as administrators, program directors, or clinicians), as well as individuals, interested in identifying an appropriate intervention, then putting it into place. It defines commonly used terms, and is built around the five stages of implementation as defined by the National Implementation Research Network (NIRN; http://nirn.fpg.unc.edu). These stages include: Exploration, Installation, Initial Implementation, Full Implementation, Program Sustainability (see Fixsen et al. 2005, for full descriptions of these stages). For each stage of implementation, the guide includes best practices and potential challenges. The guide lists a number of additional resources that can be accessed for each stage.

Brach, Cindy, Nancy Lenfestey, Amy Roussel, Jacqueline Amoozegar, & Asta Sorenson. 2008. Will It Work Here? A Decisionmaker's Guide to Adopting Innovations. Agency for Healthcare Research and Ouality.

http://www.innovations.ahrq.gov/guide/InnovationAdoptionGuide.pdf

This tool is an implementation guide based on Rogers' *Diffusion of Innovations* (Roger 2003). The tool is organized in four modules guided by the following primary questions:

I. Does the innovation fit? II. Should we do it here? III. Can we do it here? IV. How will we do it here? The guide includes links to additional tools available online (e.g., it provides a link to the Kellogg Foundation's handbook to developing logic models) and provides case studies or examples of concepts under discussion. The guide is user-friendly and is designed so that users can move easily between sections that are relevant to their efforts.

Dynarski, Mark, Linda Clarke, Brian Cobb, Jeremy Finn, Russell Rumberger, and Jay Smink. (2008). Dropout Prevention: A Practice Guide (NCEE 2008–4025). Washington, DC: National Center for Education Evaluation and Regional Assistance, Institute of Education Sciences, U.S. Department of Education. Retrieved from http://ies.ed.gov/ncee/wwc.

This practice guide is targeted at educators, superintendents, school boards and state policymakers. It offers six recommendations on dropout prevention strategies, indicating the level of evidence for each recommendation. Recommendations can be rated as having strong, moderate or low evidence. The guide also provides descriptions of ways that the recommendations could be carried out.

Mattox, Teryn, Sarah B. Hunter, M. Rebecca Kilburn, and Shelley H. Wiseman. 2013. Getting to Outcomes for Home Visiting: How to Plan, Implement, and Evaluate a Program in Your Community to Support Parents and Their Young Children. Washington, DC: RAND Corporation. Retrieved from http://www.rand.org/pubs/tools/TL114.html

This toolkit provides step-by-step guidance through a 10 step process to plan, implement, and evaluate a program. For instance, step 1 focuses on identify needs and resources in the community; step 2 looks at identifying goals and desired outcomes, all the way through step 10 which helps communities plan for program sustainability. The toolkit includes checklists, examples, tips and resources, and tools (e.g., worksheets) that communities can use to ensure that home visitation programs are implemented and supported in ways that increase the probability of desired outcomes.

Meyers, Duncan C., Jason Katz, Victoria Chein, Abraham Wandersman, Jonathan P. Scaccia, Annie Wright. 2012. Practical Implementation Science: Developing and Piloting the Quality Implementation Tool. *American Journal of Community Psychology* 50:481-96.

This article lays out the elements of a Quality Implementation Tool, which can be used to facilitate quality implementation. The authors illustrate how the tool can be used by the different systems (particularly the Support System and the Delivery System) articulated within the Interactive Systems Framework for Dissemination and Implementation to ensure that all of the steps of implementation are addressed adequately when introducing an innovation.

The authors distinguish between quality implementation and program adherence or program integrity.

The Active Implementation Hub. http://implementation.fpg.unc.edu/?o=nirn

"The Active Implementation Hub is a free, online learning environment for use by any stakeholder involved in active implementation and scaling up of programs and innovations. The site goal is to increase the knowledge and improve the performance of persons engaged in actively implementing any program or practice." The site is designed to develop knowledge about and the practice of implementation science and scaling up. It offers a variety of content, activities, web clips, and other resources that can be utilized by entities interested in implementing a program

The Community Tool Box. http://ctb.ku.edu/en

The Community Tool Box provides resources and tools to help people work together to build healthier communities. The Tool Box includes 46 chapters that offer practical, step-by-step guidance in community-building skills, such as how to conduct community assessments, promote interest and participation in initiatives, develop a strategic plan and organizational structure, recruit and train staff and volunteers, and achieve sustainability. Toolkits are available for communities to use, and case studies and examples are included. The language is straightforward, with concepts explained without technical jargon.

Field-specific discussions of implementation science

Baum, Katrina, Katherine M. Glakesless, Jacqueline Lloyd, & Anthony Petrosino. 2013. Violence Prevention: Moving from Evidence to Implementation. Institute of Medicine.

This monograph stems from an IOM workshop on the evidence base for violence prevention. The paper describes where evidence-based programs and practices can be found, but notes the gap between evidence-based treatments (EBTs) and the transfer of these to real-work settings. They acknowledge the challenges introduced by adaptation. They refer to two models to assist with the challenges of implementation: Communities that Care (CTC) and Promoting School-Community-University Partnerships to Enhance Resilience (PROSPER).

Cabassa, Leopoldo, & Ana A. Baumann. 2013. "A Two-Way Street: Bridging Implementation Science and Cultural Adaptations of Mental Health Treatments." *Implementation Science* 8: 90.

The authors of this article are interested in the intersection of implementation science and cultural adaptation to better address racial/ethnic disparities in mental health care. Their discussion raises the question explicitly about how and when evidence-based treatments (EBTs) should be modified. The authors write that implementation science (IS) contributes to cultural adaptation (CA) a focus on multi-level contextual factors that affect implementation of EBTs. CA enhances the focus on how culture can influence client-level outcomes and implementation outcomes. They discuss the need to balance fidelity with adaptation.

Hyde, Pamela S., Kathry Falls, John A. Morris, Jr., and Sonja K. Schoenwald. 2003. Turning Knowledge into Practice: A Manual for Behavioral Health Administrators and

Practitioners About Understanding and Implementing Evidence-Based Practices. The Technical Assistance Collaborative, Inc., and The American College of Mental Health Administration. Retrieved from http://www.acmha.org/content/reports/EBPManual.pdf

The manual was developed as way to help translate scientific research findings into real world service delivery settings. The manual focuses on describing what evidence-based practices are and how to go about implementing such a program or practice. It focuses on what practitioners and organizations need to do to successfully implement such a practice. It closes with a chapter on sustainability. Chapters include lists of questions that can help organizations address various aspects affecting implementation (e.g., organization readiness) and examples illustrate certain challenges and solutions.

Lobb, Rebecca & Graham A. Colditz. 2013. Implementation Science and Its Application to Population Health. *Annual Review of Public Health* 34: 235-51.

This article suggests that for implementation science to reach its full potential, an increase in stakeholder involvement in research (participatory research) and in attention paid to external validity (by funders and publishers) is needed. These changes would increase the chance that EBTs would achieve "real world" fit, which in turn would increase the probability of improved health outcomes. The authors note the complexity of systems involved in implementation efforts.

Metz, Allison, & Leah Bartley. 2012. Active Implementation Frameworks for Program Success: How to Use Implementation Science to Improve Outcomes for Children. Zero to Three, March, p. 11-18. http://www.zerotothree.org/about-us/areas-of-expertise/reflective-practice-program-development/metz-revised.pdf

This article gives a very concise overview of the frameworks developed by Fixsen et al. (2005). Metz and Bartley are interested in applying these frameworks to improve the outcomes for children and families when implanting EBPs in early childhood settings. The authors provide an example of a "cascading logic model" to illustrate the multi-level aspect of effective implementation. They also provide questions that are relevant for those interested in implementing EBPs in early childhood settings.

Sorensen, James L., & Thomas Kosten. 2011. Developing the Tools of Implementation Science in Substance Use Disorders Treatment: Applications of the Consolidated Framework for Implementation Research. *Psychology of Addictive Behaviors* 25 (2): 262-68.

This article introduces a series of studies that look at the implementation of substance use disorder EBTs through the lens of the Consolidated Framework for Implementation Research (CFIR), "a synthesis of theories and conceptualizations of the components needed for successful implementation strategies" (p. 262). He notes that the collective set of studies reveals how the attention in implementation research has largely focused on the initial implementation, but not their maintenance. The authors note the need for improved measurement, and the development of common terms, understandings, and measures, to promote the development of IS across disciplines.

Empirical studies of implementation

Hanbury, Andria, Katherine Farley, Carl Thompson, Paul M Wilson, Duncan Chambers, & Heather Holmes. 2013. Immediate Versus Sustained Effects: Interrupted Time Series Analysis of a Tailored Intervention. *Implementation Science* 8: 130. doi:10.1186/1748-5908-8-130

This paper presents the results of a time series analysis of an intervention designed to increase primary health care professionals' adoption of a national recommendation that women with mild to moderate postnatal depression (PND) are referred for psychological therapy as a first stage treatment. The significant, immediate, positive effect upon percentage referral rates for psychological treatments was not sustained over the 10-month follow-on period. Qualitative interviews suggested that the intervention had not successfully tackled the barriers targeted.

Implementation Science. http://www.implementationscience.com/

This journal is an open access, peer-reviewed online journal that publishes research relevant to the scientific study of methods to promote the uptake of research findings into routine healthcare in clinical, organizational or policy contexts. The journal was founded in 2006, and the submission rate has more than tripled since then.

Pas, Elise T., & Catherine P. Bradshaw. 2012. Examining the Association Between Implementation and Outcomes: State-wide Scale-up of School-wide Positive Behavior Intervention and Supports. *Journal of Behavioral Health Services & Research* 39(4): 417–433.

This study reports on the findings of a "Type II" translational effort to implement SW-PBIS in 421 elementary and middles schools in Maryland. The authors describe the three measures for fidelity and assess their correlation with math and reading achievement, truancy, and suspensions. The Implementation Phases Inventory—scored by the schools' PBIS intervention support coach—was positively related to all three outcome measures. Neither the School-wide Evaluation Tool—scored by an external evaluator—nor the Benchmarks of Quality—scored by school team members—were significantly correlated with any of the three outcome measures. They note that their findings replicate those of other studies, such that the implementation measure used can return different patterns in the findings.

Spoth, Richard, Cleve Redmond, Scott Clair, Chungyeoi Shin, Mark Greenberg, and Mark Feinberg. 2011. Preventing Substance Misuse Through Community-University Partnerships: Randomized Controlled Trial Outcomes 4 ½ Years Past Baseline. *American Journal of Preventive Medicine* 40(4):440–7.

The purpose of the study was to examine the long-term findings from an RCT of a community-university partnership model (PROSPER) designed to prevent substance misuse and related problems. A cohort sequential design included 28 public school districts in rural towns and small cities in Iowa and Pennsylvania that were randomly assigned to community-university partnership or usual-programming conditions. At

baseline, 11,960 students participated, across two consecutive cohorts. Data were collected from 2002 to 2008. Partnerships supported community teams that implemented universal, evidence-based interventions selected from a menu. Results showed significantly lower substance use in the intervention group for 12 of 15 point-in-time outcomes, with relative reductions of up to 51.8%. Growth trajectory analyses showed significantly slower growth in the intervention group for 14 of 15 outcomes.

Disseminating evidence-based programs

Kreuter, Matthew & Jay Bernhardt. December 2009. Reframing the Dissemination Challenge: A Marketing and Distribution Perspective. *American Journal of Public Health* 99(12) 2123-2127.

This article presents the thesis that a fundamental obstacle to successfully disseminating and implementing evidence-based public health programs is the near-total absence of systems and infrastructure to carry out marketing and distribution. The authors describe and evaluate four dominant strategies now used to promote dissemination and implementation: (1) increased scientists' dissemination efforts, (2) assembling inventories of effective programs, (3) building partnerships for dissemination, and (4) increasing demand for EB approaches. They make six recommendations for building the needed system infrastructure: (1) promote programs strategically, (2) build distribution capacity, (3) systematically identify proven programs, (4) transform research-tested interventions, (5) build a comprehensive system of user support, and (6) establish evaluation measures and processes. Finally, the authors discuss the responsibility within the public health community for implementation of these recommendations.